Designation: D6715 – 13

Standard Practice for Sampling and Preparation of Fresh or Salt-Preserved (Cured) Hides and Skins for Chemical and Physical Tests[1]

This standard is issued under the fixed designation D6715; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This practice covers the sampling and preparation of fresh or salt-preserved (cured) hides for physical and chemical tests. The hides or skins to be tested are grouped into lots. Each lot is randomly sampled in such a manner as to produce a representative sample of that lot. This lot sample may be used to determine compliance of the lot with applicable specification requirements, and on the basis of results, the lot may be accepted or rejected in its entirety.

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Terminology

2.1 *Definitions:*

2.1.1 *brine-curing*—preserving by immersing flayed hides into concentrated/saturated salt (sodium chloride) solution until sufficient salt has been absorbed by the hide, thus making it temporarily resistant to bacterial action (cured).

2.1.2 *cure*—commonly used industry reference to salt preservation.

2.1.3 *cured hides (salted hides)*—commonly used industry term for salt-preserved hides.

2.1.4 *de-haired hide*—a fresh or salt-preserved hide with the hair removed.

2.1.5 *fresh hide*—a recently flayed hide or skin that has not been preserved (such as salt-cured).

2.1.6 *hair-on hide*—a fresh or salt-preserved hide with the hair not removed.

2.1.7 *laboratory terms*—any laboratory terms and definitions employed within this practice are commonly used in normal laboratory practice and require no special comment.

2.1.8 *lot (or batch)*—units of products from a single type, grade, class, size, and composition, manufactured under essentially the same conditions and time.

2.1.8.1 *Discussion*—Fresh or salt-preserved hides in formed lots should be produced from:

(*1*) Units of product of similar size and type,

(*2*) Fresh or salt-preserved hides obtained from the same producer (functionally equivalent),

(*3*) A single product method, or

(*4*) Sequential production batches.

2.1.9 *salt preservation (cure)*—is defined as the action of applying salt (typically sodium chloride) to flayed hides in order to make them temporarily resistant to degradation by bacterial (enzymatic) action. Typically, this is achieved by either brine-curing or wet-salting (salt-packing).

2.1.10 *salt-preserved (cured) hides*—are defined as hides that have been processed into a condition that makes them temporarily resistant to degradation by bacterial (enzymatic) action. This is achieved by the application of adequate salt (typically sodium chloride) to the hide.

2.1.11 *unit*—an item of fresh or salt-preserved hide in the form in which it is purchased, such as a single hide, skin, or any part thereof.

2.1.12 *wet-salting (salt-pack)*—the action of applying sufficient granular salt (sodium chloride) to flayed hides (normally upon the flesh side) over sufficient time, in order to have the salt absorbed by the hide, making it temporarily resistant to bacterial action (cured).

3. Significance and Use

3.1 The sampling procedures described in this practice have been designed to ensure random sampling of salt-preserved hides and skins for physical and chemical tests. Fresh or salt-preserved hides are natural products and as such are subject to extensive variability. The physical and chemical properties vary considerably depending on location on that specific hide, side, or skin from which the test sample is taken. Random sampling of specimens from a predefined location and

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orientation minimizes test bias and variability. This practice defines these parameters.

3.2 In general, tests carried out upon fresh or salt-preserved hides require composite lot samples generated using the preparation methods described within this practice. Subsequent tests typically require those composite samples to be in two forms:

3.2.1 *Expressed Hide Fluid*—where residual hide fluid is pressed from cleaned individual hair-on or de-haired hide sample, then equal volumes of each extracted fluid are blended together to create the composite sample.

NOTE 1—Sample may be de-haired prior to pressing.

3.2.2 *Hide Material Sample*—where equal quantities of cleaned hair-on or de-haired hide material are blended together to create a representative composite sample.

NOTE 2—Samples may be de-haired prior to compositing.

4. Conditioning

4.1 Since many tests performed upon fresh or salt-preserved hides involve the assessment of bacterial action, conditioning of the hide samples should be avoided. When possible, sample preparation should be performed immediately following completion of sampling.

4.2 Chemical and physical tests of fresh or salt-preserved hides, unless otherwise specified in the applicable test method, specification, or procurement document, shall be performed under laboratory standard atmospheric conditions, which is 50 ± 4 % relative humidity at a temperature of 23 ± 1°C (73.4 ± 2°F). Include hair-on or de-haired in the report of all tests. If testing conditions vary from this standard, the actual conditions shall be included in the report of all such tests.

5. Sampling Procedure

5.1 Prior to sampling, identify the product properly as a lot or batch.

5.2 Select units from locations scattered throughout the lot, not from the same portion of the lot, such as a single carton, layer, and so forth. Take units without regard to quality.

5.2.1 The number of samples taken depends on the reliability of the test results, the deviation of the properties, and the error of the testing procedure. The number of samples taken may be at the discretion of the user and the related test method and should also be recorded on the test report. It is recommended that 12 samples be taken for every 50 000 ft^2 of hides or skins. These 12 shall be considered a lot or batch.

NOTE 3—By reason of possible high moisture contents of fresh or salt-preserved hides, samples should be taken and immediately sealed in airtight (non-absorbent) plastic wrap or bags, followed by storage in a cool place until used.

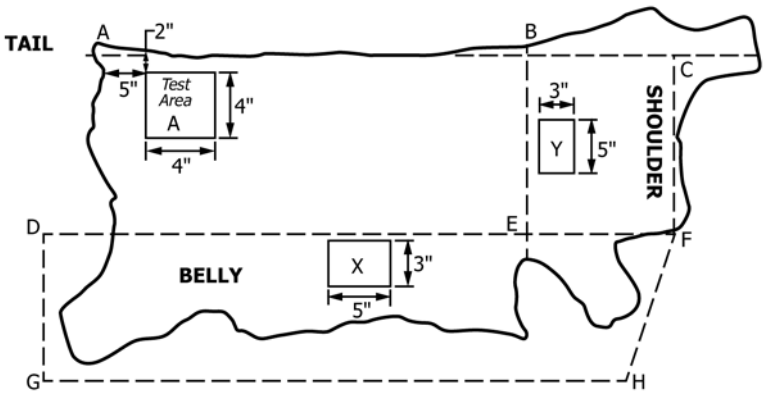
5.3 The standard location for sampling fresh or salt-preserved hides is the kidney area (designated as Test Area *A* in Fig. 1). Sampling in the belly or shoulder area is only applicable if that is the end product being sold or purchased.

5.3.1 *Skins (Fig. 1)*—Cut the test piece to the size and shape required for the tests to be made, with one edge parallel to and 1 in. (25.4 mm) from the backbone line, beginning 4 in. (102 mm) from the root of the tail. Pieces shall be cut from only one side of the backbone of each skin. The test area for skins corresponds to area *A* for cattlehides.

5.3.2 *Cattlehides*—The location and size of cutting shall be as follows:

5.3.2.1 *Hides, Sides, Crops, Backs, and Bends (Fig. 1)*—Cut the test piece to the size and shape required for the test to be made, with one edge parallel to and 2 in. (51 mm) from the backbone line beginning 5 in. (127 mm) from the root of the tail. In most instances, test piece *A* may be cut 4 by 4 in. (102 by 102 mm). Sample double bends, belting butts, and hides on only one side of the backbone (see Test Area *A*).

5.3.2.2 *Bellies (Fig. 1)*—Cut the test piece, *X*, 3-in. (76-mm) wide and 5-in. (127-mm) long with one long edge parallel to and 1 in. (25.4 mm) from the belly line, *DF*. Locate the middle of the piece midway between *D* and *F*.



in.	mm	in.	mm
2	51	3	76
4	102	5	127

FIG. 1 Location of Test Area

5.3.2.3 *Double Shoulders (*Fig. 1*)*—Cut the test piece, *Y*, 3 by 5 in. (76 by 127 mm) with a long edge parallel to and 1 in. (25.4 mm) from the shoulder line, *BE*. Locate the middle of the piece midway between *B* and *E*.

5.3.3 Cut each specimen for test with its long dimension perpendicular to the backbone line unless otherwise specified in the corresponding test method.

5.3.4 When several specimens are required from each piece, cut them in order of their corresponding method, beginning at the edge nearest the tail.

5.3.5 When cutting specimens for physical tests, areas selected shall be free from visible defects such as cuts, scratches, and other obvious flaws.

6. Sample Preparation

6.1 Time is crucial in the preparation of fresh or salt-preserved hides for chemical testing. Samples should not be prepared if analysis can not be done immediately. The following procedures should be executed with a minimum of hide exposure to both the air and moisture- or salt-absorbent materials (including human skin). Ensuring this will prevent or minimize any significant moisture or salt loss from the samples.

6.2 During all stages of preparation, samples shall always be cut on a non-porous, non-absorbing hard surface using a clean sharp cutting tool, preferably a new razor or scalpel blade. Avoid excess pressure on the sample that could force liquid (moisture) from the hide sample.

6.3 *De-hairing and Cleaning:*

6.3.1 Without damaging the hide surfaces, carefully remove all the hair and manure from each hide sample using appropriate equipment (clippers, scissors, razor, knife, and so forth).

6.3.2 Remove any loose surface salt or residual undesired material (manure, dirt, and so forth) from each hide sample.

NOTE 4—Typically the volume of liquid extracted (pressed) from each individual hide sample is small and usually requires wringing (squeezing) of almost all the original hide sample to obtain sufficient volume of expressed liquid. Therefore it is recommended that after the circular hide plug for the hide material composite (see 6.4) is cut, then the remaining hide sample be used for liquid extraction.

6.4 *Hide Material Sample:*

6.4.1 Using appropriate equipment (scalpel, single-edged razor blade, cutting die, and so forth), cut a 1 in. (25.4 mm) diameter circular plug (disc) from each original hide sample,

6.4.2 Uniformly dice each plug into ¼ in. (6 mm) cubes,

6.4.3 Place all the diced-up samples into a suitably sized airtight glass or plastic container that has minimal airspace once all diced hide samples have been added,

6.4.4 Repeat the dicing procedure for each of the individual hide sample plugs, until the composite sample is complete,

6.4.5 Thoroughly mix the composite sample.

6.4.6 All chemical analyses shall be taken from the composite sample and be performed in duplicate.

6.5 *Expressed Liquid Sample:*

6.5.1 Manually (hand squeezing) or mechanically (vice, clamp, or press) wring each hide sample so that the resultant expressed fluid is captured in an appropriate clean and dry receptacle (glass or plastic Petri dish, beaker, and so forth). It is advisable to extract at least 2 mL of fluid per sample.

6.5.2 Using an appropriate measuring device (such as a calibrated dropping pipette), blend together equal portions of each hide sample fluid into an appropriate (airtight) container.

6.5.3 Carefully mix the composite by gentle agitation, then seal the container and store it until the liquid is required for use.

6.5.4 Storage of the liquid sample should be avoided, if possible. However, where it may be necessary, storage should be kept to an absolute minimum and under refrigerated conditions so as to minimize or eliminate any bacterial action. Refrigerated storage should be for no more than 8 h.

7. Keywords

7.1 chemical tests; cured hides; de-haired hide; fresh hide; hair-on hide; lot; physical tests; preparation; salt-preservation; salted hides; sampling; unit